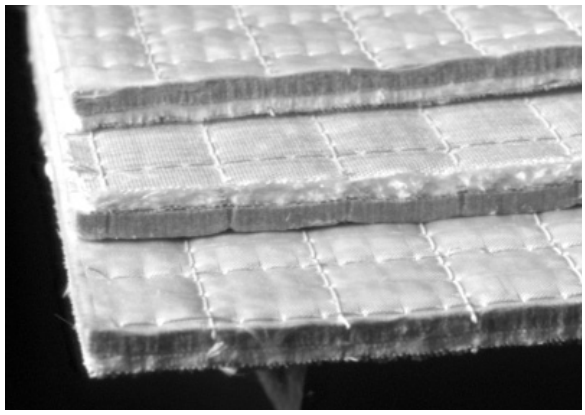
Thermal Ceramics

K-Shield Felt AG/ Min-K Composite

Product Information



Thermal Ceramics has recently introduced a composite insulation system which combines the high temperature use limitsof ceramic fiber felts with the low thermal conductivity benefitsof microporous insulation. This material, a composite ofThermal Ceramics' K-Shield Felt AG and the Min-K Division'smicroporous core, is available in a quilted form. This compos-ite offers several key advantages over either a traditionalmicroporous material, or a quilted fibrous material, whilemaintaining the low thermal conductivity (shown below) typi-cally seen in microporous products.

The K-Shield Felt AG/Min-K composite is lighter than comparable Min-K materials. The nominal density of K-Shield FeltAG is 6 pcf, resulting in a final core density of 11 pcf for the 16pcf Min-K or 7 pcf for the 8 pcf Min-K material, while the thermal conductivity stays virtually constant.

Flexible Min-K consists of a microporous core and an outertextile facing that typically determines the temperature uselimit. High temperature cloths (>1200°F) are often very costlybut by using the K-Shield Felt AG on the hot face, the addi-tional cost of cloth may be eliminated. Due to the fibrousnature of ½ the thickness of these composites, costly edgebinding may be eliminated in some instances.

By employing the K-Shield Felt AG on the Hot Face, the composite can be used at temperatures greater than the standardmaximum temperature use limit of the microporous core.

The acoustic properties of Min-K and the K-Shield Felt AG arecomplimentary as each material offers good sound absorptioncharacteristics at different frequencies.

Features

- Lightweight
- Lower cost
- High temperature use limit
- Good sound absorption at different frequencies
- Increased flexibility

Physical Properties

Nominal density, pcf *(kg/m³)*	8 or 11 *(128 and 176)*
*Maximum temperature rating, °F *(°C)*	2000 *(1093)*
*Continuous use limit, °F *(°C)*	2000 *(1093)*
Melting point, °F *(°C)*	3200 *(1760)*
Fiber index, %	75 - 80

Thermal Conductivity

BTU•in./hr•ft^2•°F (w/m•k) (ASTM C 201)

Mean temperature	8 pcf	11 pcf
@ 500°F *(260°C)*	0.30 *(0.04)*	0.25 *(0.04)*
@ 1000°F *(538°C)*	0.49 *(0.07)*	0.39 *(0.06)*
@ 1500°F *(816°C)*	0.73 *(0.11)*	0.57 *(0.08)*
@ 1800°F *(982°C)*	0.88 *(0.13)*	0.68 *(0.10)*

*K-Shield Felt AG maximum and continuous temperature ratings are 2300°F *(1260°C)* and the Microporous Core maximum and continuous temperature ratings are 1832°F *(1000°C).* Maximum and continuous temperatures ratings will be dependenton thickness.

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